I. AMENDMENTS

IN THE CLAIMS

Cancel claims 8, 22, and 27-29 without prejudice to renewal.

Please enter the amendments to claims 1, 9, 11, 21, and 23, as shown below.

Please enter new claims 30-35, as shown below.

- 1. (Currently Amended) A calorimetric device comprising
- a) a U-shaped calorimeter tube having an inlet end and an outlet end, and mounted onto a support at the inlet end and the outlet end; and
- b) a sensor, wherein the calorimeter tube comprises a sensor layer that detects a temperature change in the calorimeter tube.
- 2. (Previously presented) The device of claim 1, wherein the sensor detects temperature input into the calorimeter tube and/or temperature output from the calorimeter tube required to maintain the calorimeter tube at a substantially constant temperature.
- 3. (Previously presented) The device of claim 1, further comprising a coating layer on the calorimeter tube, wherein the coating layer provides for mechanical bending of the calorimeter tube in response to a temperature change within the calorimeter tube.
- 4. (Previously presented) The device of claim 1, further comprising a coating layer on the calorimeter tube, wherein the coating layer provides a means of detecting a change in electrical properties of the coating layer in response to a temperature change within the calorimeter tube.
- 5. (Previously presented) The device of claim 1, further comprising a reflector mounted onto the calorimeter tube.
- 6. (Original) The device of claim 1, wherein the device detects temperature changes in the range of from about 1 pJ to about 1000 pJ.
- 7. (Previously presented) The device of claim 1, wherein the calorimeter tube has a total volume capacity in a range of from about 1 μl to about 1 ml.

8. (Cancelled)

9. (Currently Amended) The device of claim [[8]] 1, wherein the sensor layer is selected from a thermistor, a piezoelectric material, and a piezoresistive material.

10. (Canceled)

- 11. (Currently Amended) The device of claim [[10]] 1, wherein the calorimeter tube is enclosed in a vacuum.
 - 12. (Original) An array comprising a plurality of the device of claim 1.
 - 13. (Original) The array of claim 12, further comprising a data storage means.
 - 14. (Original) The array of claim 12, further comprising a data analysis means.
- 15. (Previously presented) A method of detecting a temperature change that occurs in a process, the method comprising

introducing a sample comprising a chemical reactant, a biological entity, or a macromolecule into the device of claim 1; and

detecting a temperature change in the calorimeter tube.

- 16. (Original) The method of claim 15, wherein the process is selected from a chemical reaction, a biochemical reaction, a binding reaction, a physical process, a light-induced process, and a biological reaction.
- 17. (Previously presented) The method of claim 15, wherein the device comprises a reflector mounted on the calorimeter tube, and wherein said detecting comprises detecting a light beam reflected from the reflector.
 - 18. (Original) The method of claim 17, wherein the detecting is by a charged coupled device.
- 19. (Previously presented) The method of claim 15, wherein said detecting comprises detecting bending of the calorimeter tube.

20. (Original) The method of claim 19, wherein said detecting is by a capacitor.

21. (Currently Amended) A calorimetric device comprising

a) a U-shaped reaction vessel having an inlet and an outlet, and mounted onto a support at or near the inlet

and the outlet; [[and]]

b) a sensor, wherein the sensor detects temperature input into the reaction vessel and/or temperature

output from the vessel required to maintain the reaction vessel at a substantially constant temperature; and

an integrated heating device used to heat the reaction vessel and maintain a substantially constant temperature based on the detected temperature input and/or output.

22. (Cancelled)

23. (Currently Amended) The calorimetric device of claim [[22]] 21, wherein the integrated heating

device also functions as a temperature sensing element and/or a thermo-mechanical transducer.

24. (Previously presented) The calorimetric device of claim 21, wherein the reaction vessel is heated

by application of an electrical current through a coating layer on the reaction vessel.

25. (Previously presented) The calorimetric device of claim 24, wherein the electrical current applied

through the coating layer is changed to maintain a constant deflection of the reaction vessel.

26. (Previously presented) The calorimetric device of claim 24, wherein the electrical current applied

through the coating layer is changed to maintain a constant thermistor resistance.

27-29. (Cancelled)

30. (New) A method of detecting a temperature change that occurs in a process, the method

comprising

introducing a sample comprising a chemical reactant, a biological entity, or a macromolecule into the

device of claim 21; and

detecting a temperature change in the reaction vessel.

31. (New) The method of claim 30, wherein the process is selected from a chemical reaction, a

biochemical reaction, a binding reaction, a physical process, a light-induced process, and a biological reaction.

32. (New) The method of claim 30, wherein the device comprises a reflector mounted on the reaction vessel, and wherein said detecting comprises detecting a light beam reflected from the reflector.

- 33. (New) The method of claim 32, wherein the detecting is by a charged coupled device.
- 34. (New) The method of claim 30, wherein said detecting comprises detecting bending of the reaction vessel.
 - 35. (New) The method of claim 34, wherein said detecting is by a capacitor.